# AGRICULTURAL EDUCATION IN MISSOURI

Agriculture and the food, fiber and natural resource system is America's most creative, productive and basic industry. Much of this country's success in agriculture can be attributed to a sound program of education. To advance a dynamic and efficient agriculture, food & natural resource system and to assure the continued well-being of our society, first-rate education must continue to be a high priority. A cooperative effort among educational institutions, government agencies and food, fiber and natural resource-related businesses will help Missouri provide leadership for the future through enhanced education.

## Developments shaping food, fiber and natural resource systems

Participants representative of the food, fiber and natural resource industry were asked to identify the most important trends and developments over the next 30 years that will shape the future of agriculture and the food, fiber and natural resource systems. Five trends emerged as most important.

⇒ ***Accelerating globalization of markets.***

- Economic globalization with increasing population and falling trade barriers is taking us toward a more competitive international marketplace for agricultural products in which more countries will produce more kinds of foods and market them on an international scale.

⇒ ***Growing public demands for environmental protection and safe foods.***

- As production increases worldwide, pressures will grow everywhere to protect prime farmland from urban sprawl, conserve soil, safeguard water quality and fisheries, use water more efficiently, protect remaining wildlife habitats, and ensure a safe and healthy food supply.

⇒ ***Increasing reliance on technology.***

- Advances in computers, communications, information, biotechnology and other areas of technology will greatly affect education, agriculture and the operation of the food, fiber and natural resource systems.

⇒ ***Decline public understanding of Agriculture, Food, Fiber and Natural Resource Systems.***

- The general population is increasingly cut off from both direct experience and education related to Agriculture, which has serious repercussions in terms of ill-informed consumer behavior, public opinion, regulation and political decision-making.

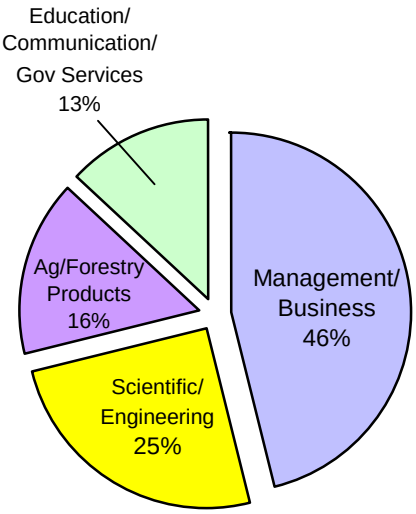
⇒ ***A more highly trained and diverse workforce.***

- A more diverse, highly trained workforce will be needed to manage the development of food, fiber and natural resource systems so that they will be competitive in the global marketplace and successful in an industry whose structure is changing.

## Agricultural Industry Employment

⇒ Agriculture employs one out of every 6.6 workers in Missouri. (MDA, 2004)
⇒ Agriculture/agribusiness provides 540,268 jobs which is more than 16.8% of Missouri's employment. (ERS, 1995)
⇒ Missouri ranks 13$^{th}$ in the U.S. in agriculture employment.
⇒ U.S. biotechnology employs 200,000 people and is a $39 billion industry. (ELANCO Co., 2006)
⇒ 52,000 job openings a year are added in the food, agricultural and natural resources industries. (ELANCO Co., 2006)
⇒ Science and engineering will represent 25% of agricultural jobs in 2010. (ELANCO Co., 2006)
⇒ USDA forecast: in 2010 there will be more jobs in agriculture than graduates. (ELANCO Co., 2006)
⇒ Missouri has 107,000 farms which rank second in the nation. (Missouri Farm Facts, 2003)

**FORECAST FOR CAREER OPPORTUNIES THROUGH 2010**
**(AFA newsletter, Spring 2006)**




## The Vision and Mission of Agricultural Education

A vision and mission statement for Agricultural Education was developed in 2000 through the Reinventing Agricultural Education for the Year 2020 Task Force; a cooperative effort of practitioners, students, government and industry. The statements have been adopted by the National Council for Agricultural Education family to guide future progress and emphasis. They are as follows:

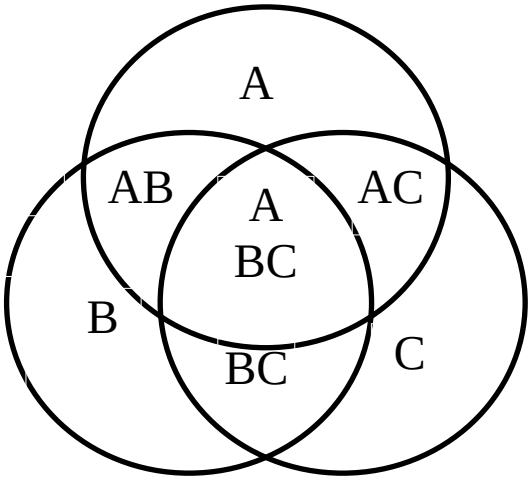
> ***Vision****: All people value and understand the vital role of agriculture and natural resources in advancing personal and global well-being.*
>
> ***Mission:*** *Prepare students for successful careers and a lifetime of informed choices in the global agriculture and natural resource systems.*

## Agricultural Education Delivery Systems

Agricultural Education - prepares secondary, postsecondary and adult students for a variety of careers and advanced college or technical training in the Agriculture, Food and Natural Resources System. Career opportunities for students range from positions in agribusiness, food science, agricultural mechanics and technology, plant science and horticulture, animal science, and natural resources conservation. Programs of study are delivered by the following: four-year "cluster" programs at comprehensive high schools and area career centers; two-year community college "specific" programs; and "supplemental" and "specific" adult education in high schools, area career centers and community colleges. At each level, training programs consist of three interrelated components:

A. Classroom Instruction (Knowledge)

B. Supervised Agricultural Experience (Skills)




C. Leadership Development (Attitude)

A. Classroom/laboratory instruction using the “problem-solving” technique.

B. Supervised agricultural experience in which each student gains “hands-on” experience outside the classroom.

C. Leadership development through the FFA in high school, PAS at the postsecondary institutions, and Young Farmers for adults currently employed in agriculture.

## Missouri Agriculture Enrollment Trends

The following table shows total enrollment in secondary, postsecondary and adult agriculture programs. High school agriculture enrollment has increased steadily since 1985 and is currently at an all time high. This reverses a trend of declining enrollment that began in 1977. Factors which contribute to the increasing enrollment have not been formally studied, but teachers and others indicate they believe that: 1) the economic improvement of agriculture affects attitudes of parents, students and counselors toward enrolling; and 2) agriculture programs have expanded content and increased flexibility. Postsecondary enrollment has also increased in response to a changing agriculture and the public attitude about the future of agriculture. Adult enrollment has fluctuated since reaching a peak enrollment in 1984-85.

### Total Student Enrollment

| Year | No. of Programs | Secondary | Junior High | Postsecondary | Adult** |
|---|---|---|---|---|---|
| 2007-2008 | 311 | 26,254 | 10,732 | 1043 | 3585 |
| 2006-2007 | 305 | 25,452 | 10,429 | | |
| 2005-2006 | 302 | 25,180 | 11,452 | 2,246 | 4,264 |
| 2004-2005 | 301 | 25,162 | 10,798 | 2,797 | 2,630 |
| 2003-2004 | 294 | 23,827 | 9,611 | 2,756 | 2,637 |
| 2002-2003 | 291 | 22,953 | 9,850 | 3,102 | 2,373 |
| 2001-2002 | 286 | 21,800 | 9,835 | 950 | 2,435 |
| 2000-2001 | 284 | 21,174 | 9,850 | 728 | 2,308 |
| 1999-2000 | 277 | 21,196 | 7,665 | 661 | 3,181 |
| 1998-1999 | 266 | 20,616 | 7,146 | 702 | 3,068 |
| 1997-1998 | 266 | 20,294 | 7,620 | 842 | 2,906 |
| 1996-1997 | 263 | 20,169 | 7,678 | 672 | 3,340 |
| 1995-1996 | 258 | 19,048 | 6,717 | 672 | 2,594 |
| 1994-1995 | 253 | 18,205 | 5,571 | 653 | 3,076 |
| 1993-1994 | 249 | 17,441 | 4,545 | 681 | 2,704 |
| 1992-1993 | 247 | 16,652 | 4,428 | 680 | 3,007 |
| 1991-1992 | 245 | 15,132 | 4,071 | 602 | 3,650 |
| 1990-1991 | 245 | 13,920 | 2,950 | 477 | 4,190 |
| 1989-1990 | 244 | 13,993 | | 405 | 3,803 |
| 1988-1989 | 243 | 13,705 | | 371 | 3,721 |
| 1987-1988 | 244 | 13,555 | | 471 | 3,852 |
| 1986-1987 | 244 | 13,443 | | 408 | 5,743 |
| 1985-1986 | 245 | 12,865 | | 517 | 6,243 |
| 1984-1985 | 245 | 13,325 | | 649 | 5,224 |
| 1983-1984 | 242 | 14,360 | | 613 | 5,073 |
| 1982-1983 | 240 | 14,474 | | | |

* Data from 12 institutions offering postsecondary agriculture.
** Adult programs are operated as a part of local programs.

## Secondary Agricultural Education in the Public Schools

Agricultural education has been a part of the public education system throughout the history of our country. When the Latin grammar schools gave way to the academies of the late 1700s, agricultural courses were sometimes included in the curriculum. While these were general theoretical courses, many states made them a requirement for graduation. With the passage of the Smith-Hughes Act of 1917, many general agriculture courses were replaced with a course called "vocational agriculture." This change from a general to a vocational focus was not well accepted by certain groups, and therefore the new courses were not included in all public school curricula. The goal of the vocational agriculture program was "to prepare young people for employment in farming." After the National FFA Organization was founded in 1928 and became an integral part of vocational agriculture, the total program was adopted by many public schools. Over the years, the program has changed to meet the needs of society and the work force. For example, the number of farmers has declined from 13.8% of the work force in 1947 to less than 2% in 2005. It is now estimated that agriculture/agribusiness provides 23% of all U.S. jobs. The Vocational Act of 1963 encouraged expansion of the vocational agriculture program to include training for entry into other agricultural occupations besides farming.

Enrollment in high school agriculture is at an all time high in Missouri with 26,254 students. Currently, 269 comprehensive high schools and 42 area vocational schools offer agriculture. Of the students enrolled, over 38% are female. There are 439 agriculture teachers in secondary schools. In 2007-2008, the program was offered in 69% of Missouri's public high schools, and approximately 9% of the high school students were enrolled.

High School agriculture is a four-year program. A student normally earns four to six credits. The following table shows course offerings and enrollments for the past nine years.

## Course Offerings and Enrollments

### Number of Schools

| Courses | 98-99 | 99-00 | 00-01 | 01-02 | 02-03 | 03-04 | 04-05 | 05-06 | 06-07 |
|---|---|---|---|---|---|---|---|---|---|
| Agricultural Science I | 255 | 263 | 268 | 274 | 291 | 294 | 292 | 302 | 305 |
| Agricultural Science II | 234 | 238 | 241 | 237 | 263 | 266 | 261 | 272 | 262 |
| Agricultural Management/Economics | 107 | 103 | 88 | 98 | 101 | 91 | 98 | 99 | 89 |
| Animal Science | 114 | 109 | 120 | 112 | 156 | 136 | 124 | 137 | 132 |
| Crop Science | 33 | 47 | 39 | 46 | 34 | 34 | 29 | 32 | 38 |
| Agricultural Sales & Marketing | 88 | 79 | 86 | 95 | 92 | 95 | 82 | 97 | 83 |
| Agricultural Power I | 72 | 68 | 73 | 72 | 74 | 76 | 69 | 68 | 62 |
| Agricultural Power II | 20 | 18 | 21 | 18 | 17 | 17 | 21 | 19 | 16 |
| Agricultural Machinery | 24 | 28 | 31 | 35 | 38 | 32 | 44 | 38 | 33 |
| Agricultural Structures | 123 | 114 | 117 | 108 | 133 | 123 | 127 | 129 | 105 |
| Agricultural Construction | 193 | 196 | 208 | 206 | 287 | 289 | 284 | 282 | 223 |
| Floriculture | 42 | 46 | 46 | 45 | 72 | 62 | 64 | 61 | 49 |
| Greenhouse Operation/Management | 107 | 117 | 122 | 142 | 174 | 170 | 179 | 169 | 142 |
| Nursery Operation & Management | 19 | 13 | 19 | 17 | 25 | 22 | 16 | 18 | 16 |
| Turf Management | 12 | 10 | 11 | 11 | 15 | 12 | 15 | 9 | 15 |
| Landscaping | 53 | 66 | 79 | 78 | 94 | 92 | 88 | 97 | 98 |
| Conservation Natural Resources | 71 | 100 | 79 | 94 | 90 | 103 | 102 | 101 | 111 |
| Forest Management | 20 | 25 | 17 | 20 | 19 | 18 | 17 | 15 | 21 |
| Supervised Occup. Exp. In Ag (Co-op) | 47 | 48 | 54 | 54 | 60 | 59 | 70 | 73 | 71 |
| Agricultural Other | 30 | 45 | 45 | 56 | 64 | 55 | 50 | 58 | 46 |
| Agricultural Literacy | 149 | 146 | 156 | 180 | 180 | 175 | 186 | 186 | 186 |
| Food Science & Tech | 21 | 23 | 23 | 24 | 37 | 28 | 37 | 40 | 30 |
| Agricultural Communications | | | | | | | | | 31 |
| Biotechnology | | | | | | | | | 2 |
| Equine Science | | | | | | | | | 6 |
| Veterinary Science | | | | | | | | | 3 |

### Number of Students Enrolled

| Courses | 98-99 | 99-00 | 00-01 | 01-02 | 02-03 | 03-04 | 04-05 | 05-06 | 06-07 |
|---|---|---|---|---|---|---|---|---|---|
| Agricultural Science I | 6860 | 6989 | 7415 | 7160 | 8304 | 9659 | 9903 | 9990 | 10891 |
| Agricultural Science II | 4233 | 4287 | 4110 | 4158 | 4491 | 4790 | 5069 | 5506 | 5787 |
| Agricultural Management/Economics | 1327 | 1178 | 1016 | 1030 | 1078 | 1068 | 1161 | 1201 | 1186 |
| Animal Science | 1564 | 1727 | 1718 | 1744 | 2508 | 2257 | 2343 | 2492 | 2452 |
| Crop Science | 304 | 475 | 358 | 437 | 421 | 408 | 352 | 363 | 557 |
| Agricultural Sales & Marketing | 1044 | 900 | 991 | 924 | 982 | 947 | 892 | 1098 | 885 |
| Agricultural Power I | 1039 | 1124 | 1143 | 1069 | 1102 | 1119 | 1040 | 1083 | 1089 |
| Agricultural Power II | 280 | 216 | 178 | 193 | 154 | 145 | 210 | 209 | 148 |
| Agricultural Machinery | 348 | 531 | 449 | 511 | 479 | 489 | 620 | 534 | 564 |
| Agricultural Structures | 1519 | 1390 | 1453 | 1440 | 1748 | 1862 | 1875 | 1917 | 1709 |
| Agricultural Construction | 2889 | 3105 | 3536 | 3278 | 3845 | 4117 | 4402 | 3872 | 3936 |
| Floriculture | 729 | 702 | 736 | 792 | 935 | 926 | 871 | 694 | 697 |
| Greenhouse Operation/Management | 1912 | 2024 | 2085 | 2168 | 2484 | 2620 | 2695 | 2507 | 2232 |
| Nursery Operation & Management | 283 | 180 | 256 | 245 | 345 | 450 | 272 | 280 | 239 |
| Turf Management | 222 | 178 | 249 | 199 | 228 | 250 | 242 | 132 | 210 |
| Landscaping | 1022 | 878 | 1032 | 1097 | 1325 | 1335 | 1338 | 1353 | 1430 |
| Conservation Natural Resources | 1086 | 1614 | 1306 | 1400 | 1427 | 1480 | 1617 | 1453 | 1867 |
| Forest Management | 333 | 315 | 219 | 253 | 213 | 235 | 190 | 197 | 308 |
| Supervised Occup. Exp. In Ag (Co-op) | 584 | 574 | 616 | 381 | 495 | 698 | 612 | 640 | 666 |
| Agricultural Other | 694 | 990 | 1039 | 963 | 831 | 862 | 789 | 1050 | 916 |
| Agricultural Literacy | 7620 | 7146 | 7665 | 9834 | 9850 | 9611 | 10798 | 11452 | 11452 |
| Food Science & Tech | 269 | 259 | 258 | 280 | 382 | 325 | 432 | 432 | 363 |
| Agricultural Communications | | | | | | | | | 377 |
| Biotechnology | | | | | | | | | 24 |
| Equine Science | | | | | | | | | 82 |
| Veterinary Science | | | | | | | | | 113 |

## Student Career Interest

All students enrolled in agriculture programs are asked to identify an agricultural interest in one of six Agricultural Career Cluster areas. The following percentages reflect student choices in 2007-08.

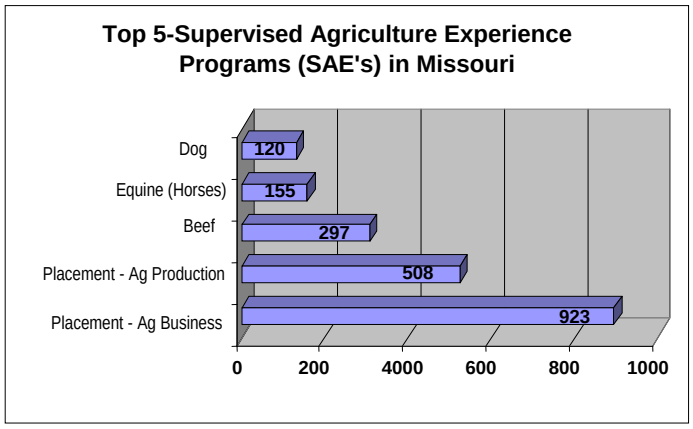
| | | | |
|---|---|---|---|
| Agricultural Business/Management Systems | 17% | Males-8.5% | Females-8.5% |
| Agricultural Mechanics & Technology | 29% | Males-22% | Females-7% |
| Animal Science Systems | 26% | Males-10% | Females-14% |
| Food Science Systems | 6% | Males-3% | Females-3% |
| Natural Resources/Conservation Systems | 12% | Males-9% | Females-3% |
| Plant Science/Horticultural System | 10% | Males-3% | Females-7% |

## FFA Membership

FFA activities are designed to teach leadership and promote personal skill development. Students can become involved at the area, district, state and national levels in various ways. Each agriculture program in Missouri has a chartered FFA chapter. The 2007-08 membership in the Missouri FFA was 24,157.

## Supervised Agricultural Experience

Each student is counseled to select courses and Supervised Agricultural Experience Program (SAEP) activities that relate to their agricultural interest.




Of the 81% of students who completed SAE programs in 2007, 28% had ownership projects and 72% had placement projects (working for someone in an agribusiness or on a farm). The average SAEP net income per student for 2007 was $2,483. Statewide, over $45,596,348 net income was generated through SAE programs.

| Year | Avg Net Income Per Student | State-wide Net Income |
|---|---|---|
| 2007 | $2,483 | $45,596,348 |
| 2006 | $3,095 | $52,693,189 |
| 2005 | 2,363 | 43,179,028 |
| 2004 | 3,253 | 59,780,500 |
| 2003 | 2,385 | 40,652,420 |
| 2002 | 2,372 | 39,950,140 |
| 2001 | 2,227 | 36,256,761 |
| 2000 | 2,518 | 39,983,971 |

These were the types of projects chosen by students in 2007-08.

## Ownership Projects

| | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|---|---|---|---|---|
| Horses | 1375 | 1353 | 1454 | 1311 | 1361 | 1372 | 1621 | 1645 | 1537 | 1552 |
| Dogs | 760 | 684 | 805 | 775 | 918 | 930 | 1091 | 1063 | 1199 | 1208 |
| Rabbits | 366 | 256 | 280 | 266 | 314 | 315 | 321 | 351 | 612 | 339 |
| Goats | 150 | 137 | 141 | 151 | 191 | 193 | 290 | 334 | 401 | 469 |
| Fish | 22 | 36 | 51 | 25 | 39 | 39 | 43 | 32 | 51 | 35 |
| Bees | 9 | 20 | 19 | 23 | 24 | 24 | 26 | 35 | 18 | 17 |
| Poultry | 385 | 327 | 413 | 409 | 451 | 453 | 568 | 611 | 604 | 647 |
| Sheep | 416 | 375 | 408 | 377 | 425 | 430 | 421 | 407 | 391 | 399 |
| Swine | 924 | 732 | 826 | 797 | 804 | 830 | 855 | 848 | 906 | 1014 |
| Dairy | 339 | 298 | 273 | 241 | 235 | 238 | 238 | 185 | 198 | 209 |
| Beef | 3528 | 3176 | 3446 | 3153 | 3033 | 3066 | 3077 | 2982 | 3086 | 2972 |
| Agribusiness | 793 | 796 | 966 | 987 | 847 | 871 | 843 | 827 | 1043 | 801 |
| Custom Work | 381 | 337 | 450 | 451 | 389 | 392 | 457 | 317 | 318 | 438 |
| Vegetables | 427 | 479 | 393 | 320 | 419 | 419 | 503 | 375 | 410 | 439 |
| Plants | 582 | 430 | 458 | 413 | 452 | 452 | 593 | 426 | 379 | 425 |
| Berries/Grapes | 49 | 37 | 27 | 24 | 37 | 37 | 45 | 37 | 50 | 54 |
| Trees/Wood lot | 157 | 135 | 119 | 109 | 116 | 116 | 167 | 112 | 92 | 106 |
| Sunflowers | 13 | 17 | 17 | 21 | 9 | 9 | 10 | 3 | 3 | 7 |
| Tobacco | 22 | 21 | 14 | 18 | 17 | 17 | 6 | 5 | 5 | 11 |
| Forages/Hay | 396 | 319 | 290 | 261 | 259 | 260 | 263 | 215 | 224 | 271 |
| Rice | 9 | 6 | 4 | 7 | 5 | 6 | 14 | 3 | 3 | 6 |
| Cotton | 11 | 9 | 8 | 4 | 9 | 9 | 8 | 3 | 3 | 7 |
| Soybeans | 389 | 340 | 336 | 350 | 305 | 318 | 269 | 236 | 212 | 254 |
| Milo | 71 | 58 | 59 | 32 | 42 | 45 | 30 | 21 | 19 | 17 |
| Corn | 299 | 233 | 232 | 205 | 227 | 229 | 215 | 215 | 179 | 202 |
| Wheat | 177 | 152 | 157 | 111 | 131 | 133 | 116 | 106 | 91 | 109 |

## Placement Projects

| | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|---|---|---|---|---|
| Agribusiness | 7582 | 8104 | 8959 | 9077 | 10101 | 10193 | 10572 | 10463 | 8958 | 9233 |
| Production | 4417 | 4070 | 4319 | 4317 | 4089 | 4194 | 4657 | 4575 | 5256 | 5083 |
| Laboratory (usually school site) | 1423 | 1519 | 1816 | 1736 | 1645 | 1645 | 1844 | 1391 | 1303 | 1139 |

## Graduate Placement

In 2007, there were 4,556 high school agricultural education graduates. Of this number 95.6 % were placed

34% are employed

- 23% in agriculture
- 11% in other areas

58% are continuing their educa

- 33% in agriculture
- 25% in other areas

4% are in the military

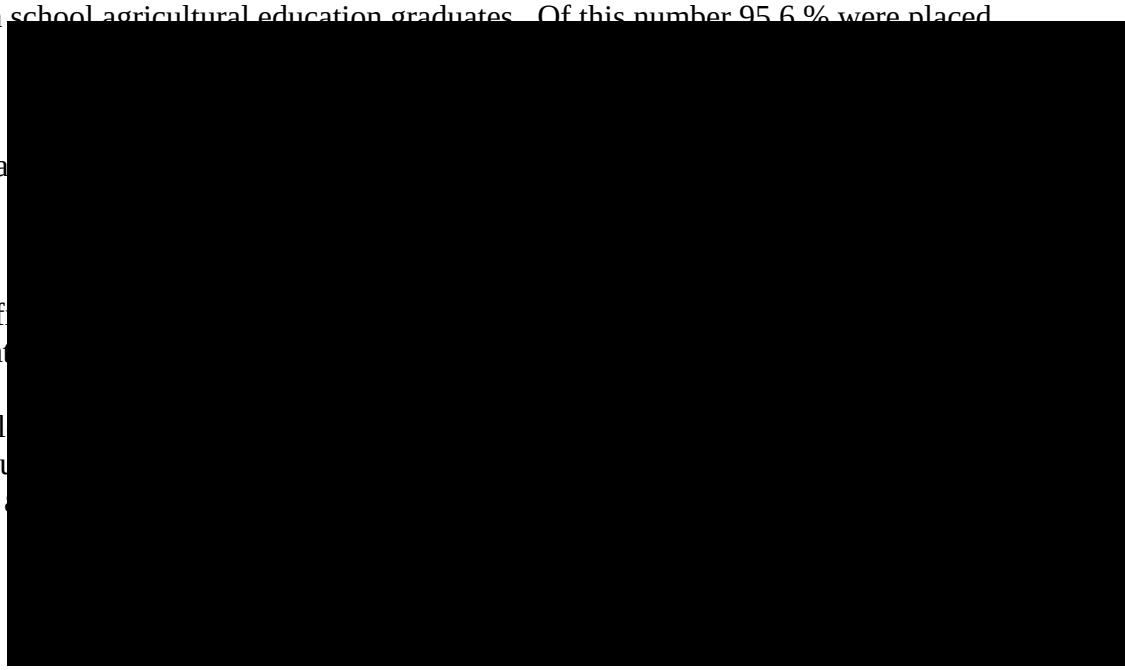
- 2% in agriculture related f
- 2% in non agriculture relat

2% are not employed

<1% are not available for empl

2% could not be found (status u

Of the total, 58% are pursuing



## Postsecondary Agricultural Education

Eleven community colleges and one state technical college in Missouri staffed with 16 instructors currently offer postsecondary-level training in agriculture. During 2006-2007, these 12 institutions served 1,043 students in 8 career programs:

- ⇒ Agricultural Production/Farm Management
- ⇒ Animal Health Technology
- ⇒ Agricultural Business
- ⇒ Agricultural Equipment
- ⇒ Agricultural Power and Machinery
- ⇒ Horticulture
- ⇒ Landscape, Nursery and Turf Management
- ⇒ General Agriculture
- ⇒ Biotechnology

The typical postsecondary student is a high school graduate who wants to train for a middle-management position and/or transfer to a baccalaureate institution. Postsecondary programs provide 64 credit hours of instruction in a two-year program for a full-time student. Programs include supervised occupational experience gained through internships and on-the-job training. Students are employed throughout Missouri and, in some cases, in other states. In most areas, students are paid for their services during the internship and also receive academic credit.

Of the 148 posts
87% are employe
78% in agri
9% in other
8% are continui
education in
1% are continui
education n
0% are not emp
0% are not avai
employmen
3% could not be
Of the total, 86% a

Leadership development is available through the Missouri and National Postsecondary Agricultural Student Organizations (PAS). The Missouri Postsecondary Agricultural Student Organization (MPASO) was established in 1981. Membership is open to any student enrolled in a postsecondary agriculture program. In Missouri, seven institutions have local PAS organizations. PAS members have the opportunity to participate in the state conference where contests are held, state officers are elected and the state business is conducted.

## Adult Agriculture

Adult agriculture classes were organized soon after the Smith-Hughes Act was passed in 1917 and have been recognized as a part of agricultural education ever since. Several types of adult education have been offered through the years in Missouri.

"Topics" classes that highlight one-session meetings have long been, and still are, a viable part of adult education in agriculture. These classes tend to address current problems and issues, update enrollees with new technologies, and explore subjects of general interest to a fairly diverse audience. Currently, they are the most common type of adult class offered. "Topics" classes typically include 8 to 12 sessions and meet weekly, biweekly or monthly, primarily during the winter months.

"In-depth" classes are becoming a popular way of providing education to adults in agriculture. An "in-depth" class is a series of sessions on the same topic (for example, a two-to-eight session series in horticulture, marketing, forestry or ag mechanics). Because content is specialized, enrollment is sometimes lower. Traditionally, "topic" and "in-depth" classes are offered as a part of local programs, and instructors are paid an hourly rate based on instructional time.

The Farm Business Management Analysis (FBMA) program is a third type of adult education in agriculture. The program involves class work, on-site visitations and record analysis, all designed to improve the management of the farm business and to help farmers achieve their personal, financial and farm business goals.

A significant development in adult leadership training was the formation of the Missouri Young Farmers/ Young Farm Wives organization in 1972. This organization involves adults in educational and leadership activities at the local, district, state and national levels. Membership in the organization is open to persons of any age. State activities include a 2-day convention in February, a 2 1/2-day tour in August and participation in the Governor's Conference on Agriculture.

These facts and figures describe the status of adult agricultural education in Missouri:

- ⇒ 4420 adults enrolled in DESE reimbursed agriculture classes in 2007-2008.
- ⇒ 50 schools received DESE reimbursement for adult classes in 2007-2008.
- ⇒ There were 43 active Young Farmers/Young Farm Wives chapters in 2007-2008. State membership totaled 980.
- ⇒ Agriculture instructors in 24 schools had part or all of their time scheduled for adult instruction in 2007-08 and over 120 farm families enrolled in the FBMA program.

A staff survey of all schools in 1996 revealed that 194 schools offered adult education. The following options were offered:

Traditional Adult Education Classes Plus Alumni---------- 48 schools offered
Alumni Only ---------- 53 schools offered
Joint Traditional Adult Education & Alumni---------- 25 schools offered
Adult Education Offered Cooperatively With Other Groups--------- 59 schools offered

## The Development of Professional Teachers of Agriculture

Missouri law and the Department of Elementary and Secondary Education's regulations require all teachers and administrators in vocational education programs to be specifically certificated for their teaching assignments.

Missouri has five institutions training agriculture teachers: University of Missouri-Columbia, Northwest Missouri State University at Maryville, University of Central Missouri at Warrensburg and Missouri State University at Springfield and College of the Ozarks, Point Lookout.

Preservice programs alone cannot adequately prepare all teachers in all competencies. Therefore, professional development programs are designed and offered to assist the teachers in meeting their needs and the needs of their clientele. The program is jointly planned by teachers, teacher educators and state supervisors. A Professional Development Specialist manages the state-wide effort.

## Agriculture as a Part of General Education

Agricultural education began in this country as a part of general education. Passage of the Smith-Hughes Act in 1917 promoted the concept of "vocational agriculture" as a separate program. The narrow focus of vocational agriculture was broadened somewhat through the Vocational Education Act of 1963, which encouraged training for non-farm agricultural occupations. Today, however, the basic differences between the "general" and "vocational" approaches remain.

Our society's basic knowledge of agriculture is declining. More and more people in agriculture-related jobs will know less and less about their industry. In addition, a growing number of young people who do not have a background in farming or agriculture are training for agriculture-related occupations. For example, 40-45% of the students now enrolled in the University of Missouri-Columbia's College of Agriculture are non-farm, urban students. Another important issue today is providing a vocational education for adults. Many adults, for example, are interested in studying agriculture--not for career purposes, but to meet a vocational, hobby or secondary-income objectives. Additionally, more public and social interest is being focused on issues related to agriculture, food and the environment. Such trends signal a need for students and citizens in general to be better informed about the importance of agriculture and its relationship to their lives. In other words, our American society needs to be agriculturally literate.

Several projects are now underway in Missouri to develop agricultural literacy by promoting public awareness and understanding of agriculture's role in our economy and society. At the junior high/middle school level an Agricultural Literacy course has been developed, field tested in 1989-90 and offered in 2007-2008 to 10,732 seventh and eighth grade students in 188 schools. As a part of consumer information activities, adult education programs, sponsor a "Speak Out for Agriculture" contest. Other examples of this effort are the "Agriculture in the Classroom" project, supported by Missouri Farm Bureau and the Ag Literacy projects by the Missouri Department of Agriculture, introduce young students to concepts about agriculture and food production.

Building public awareness and understanding about issues and trends affecting agriculture in our state and nation is vital to having an informed citizenry.